



IN THE SPECIFICATION

The paragraph beginning at page 5, line 21 is amended as follows:

Figure 2B shows an embodiment of an ~~IC package 230~~ IC package 200 without an additional heat sink 250 attached as described above. The integrated heat spreader 230 is shown in an embodiment formed as a package cover. The edges of the integrated heat spreader 230 form an enclosure with the substrate 220 where the die (not shown) is substantially enclosed. In one embodiment, an opening 232 is included in the integrated heat spreader 230. In one embodiment, the opening 232 provides a relief for variations in pressure due to thermal changes in the die.

The paragraph beginning at page 6, line 22, and the following paragraph beginning at page 7, line 2 are amended as follows:

A noted above, in a deformation operation such as cold forming, at least a portion of the material being formed deforms plastically. After cold forming the thermal interface structure 310 against the heat spreader 320, a number of cold formed features are observed at the ~~first~~ interface 318. In one cold formed feature, the deformation causes the deforming portion of the material to flow in a conforming manner into surface features of the heat spreader 320. In this way, substantially all gaps present at the interface 318 are removed as the thermal interface structure 310 is deformed into surface features on the heat spreader 320.

In one embodiment, a cold formed feature includes a mechanical bond that is formed at the interface 318 during plastic deformation. In a mechanical bond, certain portions of the thermal interface structure 310 flow around asperities or surface features of the heat spreader 320. After deformation is complete, the interface 318 is at least partially held together mechanically by the asperities or surface features being embedded within the flowed portion of the thermal interface structure 310. This is in contrast to chemical bonding where actual bonds are formed between atoms of the thermal interface structure 310 and atoms of the heat spreader

320. In one embodiment, the interface 318 is roughened on the heat spreader 320 to enhance a mechanical bond. In one embodiment, a combination of chemical bonding, such as a formation of intermetallic compounds, and mechanical bonding are formed at the ~~first interface 303~~ 318. For example, in embodiments where the heat spreader 320 includes a nickel coating, and the thermal interface structure 310 includes indium, an intermetallic compound of indium and nickel is formed.